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COMPUTER NETWORKS-1 (GATE 2023) - REPORTS

OVERALL ANALYSIS | COMPARISON REPORT | SOLUTION REPORT

ALL(17) | CORRECT(9) | INCORRECT(8) | SKIPPED(0)

Q. 1 Solution Video | Have any Doubt ?

Which of following is true regarding domain separators?

A. By default, hub is collision domain separator as well as broadcast domain separator.

B. By default, router is collision domain separator as well as broadcast domain separator. — Your answer is **Correct**

Solution :
(b)
Router is three layer switch. It contains two broadcast. One is limited broadcast address and the other is direct broadcast address.
So if you want to broadcast only in LAN, it uses limited broadcast address (255.255.255.255). If you want to broadcast on other network, it uses direct broadcast address. So it will act as both collision domain separator as well as broadcast domain separator.

C. By default, bridge is collision domain separator as well as broadcast domain separator.

D. None of these

QUESTION ANALYTICS +

Q. 2 Solution Video | Have any Doubt ?

Which of following is true in OSI or TCP/IP model network?

A. Packet encapsulate frame. — Your answer is **IN-CORRECT**

B. Bridge is two layer switch so it can be placed in higher layer like network layer.

C. Router is three layer switch so it can be placed in lower layer like data link layer. — Correct Option

Solution :
(c)
The lower end layer device cannot work at higher end layer as per rules of networking model. Since router is used for connecting different networks in network layer, it can also in data link layer for connecting LANs.

D. None of these

QUESTION ANALYTICS +

Q. 3 Solution Video | Have any Doubt ?

Which of following is true in sliding window protocols of data link layer?

A. When the receiver window size is 1, then it accepts out of order frames.

B. When the receiver window size is indicating it accepts out of order frames, then Internally it accepts in order frames also. — Your answer is **Correct**

Solution :
(b)
In case of selective repeat ARQ, receiver window size is more than 1.
That means it can accept out of frames.
For example if receiver window is pointed to 0, 1, 2, 3 then any out of order like 3, 0, 2, 1 are accepted.
And if the frames came in same order also like 0, 1, 2, 3 are also accepted.

C. When the retransmissions of data is more because of noisy channels, Go-back-N ARQ protocol is preferred for increasing utilization.

D. None of these

QUESTION ANALYTICS +

Q. 4 Solution Video | Have any Doubt ?

Which of following is true for the received codeword not to be accepted by receiver?

A (Calculated checksum != received checksum) in CHECKSUM — Correct Option

Solution :
(a)
Checksum is calculated at sender side and it is attached to data and transmitted on the channel. The combined value transmitted is known as sender codeword. When the noise has modified the content on channel, then the calculated checksum will not be equal to received checksum then the codeword is not accepted indicating that there is a error i.e. calculated checksum != received checksum.

B (Syndrome == 0) in CRC

C (Received codeword is matching with existing valid code words) in PARITY scheme

D None of these — Your answer is **IN-CORRECT**

QUESTION ANALYTICS +

Q. 5 Solution Video | Have any Doubt ?

Given codewords are
000000000000
000000111111
111111000000
111111111111
Calculate the minimum hamming distance and no of errors that can be detected?

A 6, 5 — Your answer is **Correct**

Solution :
(a)
To detect d errors, the minimum hamming distance is (d + 1).
The minimum hamming distance is 6.
So to detect 5 errors, the minimum hamming distance is 6.
So hamming distance is 6.
No of errors can be detected is 5.

B 5, 4

C 7, 6

D None of these

QUESTION ANALYTICS +

Q. 6 Solution Video | Have any Doubt ?

Standard Ethernet cable 10base5 are used for connecting similar LAN's in bus topology. The number of repeaters required to have a length of 3000 m of total LAN are _____.

5 — Your answer is **Correct**5

Solution :
5
3000 = 500 × 6
So 6 cables are required and in between 5 repeaters are required.

QUESTION ANALYTICS +

Q. 7 Solution Video | Have any Doubt ?

5 bit sequence number is used for selective repeat ARQ protocol in lan. Sorting logic is applied to make the data to be reached as in order to network layer. The number of frames should be reached at receivers data link layer to apply sorting logic are

16 — Your answer is Correct16

Solution :
16
With 5 bit, 32 sequence number is used, 16 is sender window size, 16 is receiver window size. Since receiver is accepting out of order frames, it can apply sorting logic after all frames arrived So 16 is answer.

QUESTION ANALYTICS +

Q. 8 Solution Video | Have any Doubt ?

Which of following is true in case of CRC rules of error control policies?

A. CRC generator should not x, because x is a bad generator. — Correct Option

B. CRC can detect even number of errors, if $(x + 1)$ is a generator.

C. CRC can detect odd number of errors, if $(x + 1)$ is a generator. — Your option is Correct

D. None of these

YOUR ANSWER - c | CORRECT ANSWER - a,c | STATUS - ✗

Solution :
(a, c)
CRC rules to be followed in LAN for detecting errors.

QUESTION ANALYTICS +

Q. 9 Solution Video | Have any Doubt ?

Which of following is true with respect to bridges of networking devices?

A. Between similar LANs more than one bridge is connected to support fault tolerance. — Correct Option

B. When more than one bridge is connected between similar LANs, there is a possibility of getting loop or cycle between bridges. — Your option is Correct

C. Spanning tree protocol IEEE802.1C is applied between bridges so that graph will be converted in tree to avoid loops. — Your option is Correct

D. None of these

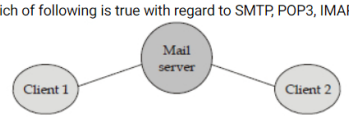
YOUR ANSWER - b,c | CORRECT ANSWER - a,b,c | STATUS - ✗

Solution :
(a, b, c)
Between similar LANs more than one bridge is connected to support fault tolerance, i.e. one bridge is not working, data can be diverted via other bridge.
There is possibility of getting loop for closed path (between bridges).
IEEE 802.1 (spanning tree protocol) will convert graph to tree.

QUESTION ANALYTICS +

Q. 10 Solution Video | Have any Doubt ?

Which of following is true with regard to SMTP, POP3, IMAP4 protocol?



A. Port numbers of SMTP, POP3, IMAP4 are 25, 143, 110.

B. SMTP is used to retrieve mails from mail server and POP3 is used for sending mails to mail server.

C. POP3 protocol will allow to download mails only from single device. — Your answer is Correct

C POP3 protocol will allow to download mails only from single device. Your answer is **Correct**

Solution :
(c)
Port numbers of SMTP is 25, POP3 is 110, IMAP4 is 143.
SMTP is push protocol and is used for sending mail to the mail server where as POP3 and IMAP4 are used for retrieving mails from mail server.
POP3 is used for downloading entire mail but on only single device.

D None of these

QUESTION ANALYTICS +